

Claims

1. Device for feeding small parts such as studs, pins, bushings, nuts, and the like to a conveying mechanism, comprising a reservoir that is designed to accommodate a relatively large number of small parts and that has a bottom with an elongated bottom recess and a bottom surface inclined downward toward the bottom recess, a slide arranged in the bottom recess, which slide has an upper feeder trough for accommodating small parts, and an actuator for achieving a relative motion between the reservoir and the slide such that the slide can be moved relative to the reservoir to a first position in which the bottom surface of the reservoir and the feeder trough are adjacent and the orientation of the feeder trough is essentially horizontal, and can be moved to a second position in which the feeder trough is raised a specific distance above the bottom surface while maintaining an essentially horizontal orientation, **characterized in that** the actuator can move the feeder trough (7) from the second position into an inclined third position in which the trough has an inclination to the horizontal that causes the feeding of the small parts.
2. Device according to claim 1, characterized in that the feeder trough (7) is swivel-mounted to the slide (5) and, in the second position of the slide, can be moved by the actuator into the inclined third position relative to the slide.

3. Device according to one of claims 1 or 2, characterized in that the actuator (6) has a drive and a drive member (24) for transmitting the drive motion to the slide (5) and to the feeder trough (7), which feeder trough (7) is supported directly on said drive member in order to transmit the drive motion.
4. Device according to claim 3, characterized in that the slide (5) is supported on the drive member (24) through the intermediary of a spring (29), which transmits the upward motion of the drive member (24) to the slide, and in that the slide (5) is prevented from moving when the drive member (24) moves the feeder trough (7) from the second position into the third position.
5. Device according to one of the preceding claims, characterized in that a guide element (25), in which the drive member (24) is mounted such that it is longitudinally movable, is attached to the slide (5).
6. Device according to one of claims 4 or 5, characterized in that the spring (29) is arranged between a head bearing of the drive member (24) and the guide element.
7. Device according to one of the preceding claims, characterized in that the actuator (6) has a crank mechanism whose crank (19) is rotatably attached to one end of the drive member (24), wherein the guide element (25) in which the drive member is guided in a longitudinally movable way is rotatably mounted on the slide (5).

8. Device according to one of the preceding claims, characterized in that the slide (5) is movably mounted in a linear guide on a stand (11).
9. Device according to one of the preceding claims, characterized in that the slide (5) has a cuboid housing that encloses a hollow space into which the drive member (24) projects and in which the guide for the drive member is arranged.
10. Device according to one of claims 1 or 2, characterized in that the slide (50) can be moved back and forth between the first and second positions by a piston/cylinder arrangement that can be supplied with a pressure medium, in particular compressed air.
11. Device according to one of claims 1, 2, or 10, characterized in that the feeder trough (51) can be moved back and forth between the second and third positions by a piston/cylinder arrangement that can be supplied with a pressure medium, in particular compressed air.
12. Device according to claim 10 or 11, characterized in that the piston/cylinder arrangement for moving the slide (51) has two pistons (68) arranged in parallel cylinders (66, 67) with, extending out of the cylinders, piston rods (69) to whose ends the slide is attached.

13. Device according to claim 12, characterized in that a piston rod (72) connected to the slide (50) has a cylinder bore in which is arranged a piston (75) for moving the feeder trough (51).
14. Device according to one of the preceding claims, characterized in that the feeder trough (51) is supported on the slide (50) such that it can pivot about an axis (X) located on the front edge of the feeder trough.
15. Device according to claim 14, characterized in that the support of the feeder trough has guide grooves (60, 61) concentric to the axis (X) and pins (58, 59) that engage therein and are longitudinally movable therein.